

The connectivity of modern transportation and logistics for sustainable development in Thailand

Rungskunroch, Panrawee; Kaewunruen, Sakdirat; Shen, Zuo-Jun

License:

None: All rights reserved

Document Version

Publisher's PDF, also known as Version of record

Citation for published version (Harvard):

Rungskunroch, P, Kaewunruen, S & Shen, Z-J 2019, The connectivity of modern transportation and logistics for sustainable development in Thailand. in *The Association of Thai Professionals in European Region - Annual Conference: ATPER2019*. The Association of Thai Professionals in European Region, ATPER2019 Conference, Düsseldorf, North Rhine-Westphalia, Germany, 3/08/19. <https://atper.eu/wp-content/uploads/2019/08/Abstract_Eng_ATPER_Panrawee.pdf>

[Link to publication on Research at Birmingham portal](#)

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.



The connectivity of modern transportation and logistics for sustainable development in Thailand

Panrawee Rungskunroch^{1,2}, Dr. Sakdirat Kaewunruen¹, Prof. Zuo-Jun Shen²

¹University of Birmingham, Birmingham, United Kingdom

²University of California Berkeley, California, United State of America

E-mail: r.panrawee@gmail.com

It is well known that investment in transportation and logistics, especially rail transportation, is one of Thailand's 20-year national strategic plan. The strategy aims at fully linking the existing rail transportation system with the air transportation and other current modes of transportation for supporting the demand of foreigner, who shortly travel in Thailand, and the expanding of economic from the big cities to small cities. Regarding this study, the effect of building the modern transportation and logistics system in Thailand is intensely focused. Also, this study points out the methodology to integrate with others study fields; for example, the combination with the medical field to increase the opportunity of treatment. With respect to the information on May 2019, Thailand's government has revealed the plan to invest in rail transportation infrastructure more than one billion billion baht with the overseas government. The project gains higher investment funds for developing more than other modes of transportation and logistics.

However, the operation on the high-speed rail service has been a challenge for government and rail firms around the world because the return on investment may take up to 20 – 30 years in average for the structure cost and, the operating cost is slightly chance to return on investment. In the day and age, there are two lines of the high-speed rail in the world, which is the Tokaido Shinkansen from Japan and Jinghu HSR from China, have gained daily profit. Therefore, the planning on the transportation structure in Thailand is a big chance of researcher to give a priority on the designing of routing, operational service, frequently of the high-speed rail per hour and quality of other related services. It's provided to support the foreigners' and passengers' demand for steadiness reaching transportation and logistics. Regarding the developed countries, high-speed rail has become the main public transportation and logistics. Although they lacked profit, the government has subsidized the operational costs. Many countries took the sustainability model to combine with the transportation and logistics system due to they believed that the success of the country's transportation and logistics system might interpret in others criterial excepts the profit, i.e., country's GDP, number of investors, the explanation of business area, the environment impacts and so on. The criteria to measure the success of the transportation and logistics system can be divided into three fields containing with the social, the economic and the environment.

Regarding the developing on the social, the efficient transportation and logistics system can reduce the travel time between two cities. It reveals the opportunity of the passenger in term of tourism and education. Also, it can decentralise of power from the big cities to small cities. In the case of the rural area, the transportation and logistics system should be reformed to the transportation hub, which includes all the local public transits (i.e., ride-sharing). The new transportation system will provide an opportunity for local people to get more choices on the transportation; in other words, the connectivity hub will provide more comfortable that leads to increase the tourism on the rural area.

In term of the development on the economics, the efficient transportation and logistics systems, which is ultimately linked with the air transport, become higher advantages on the new era business as the customers (both domestic and international customers) require the fastest service. Connecting all modes of transportation can genuinely improve the logistics system to be equivalent to the competitors from aboard. The advantage of the new logistics system reflects on the fresh food products and other ingredients that is the direct benefit to the agriculturists, who lived in suburban areas causes they can easily transfer the folk wisdom. Moreover, the new logistic system can reduce the unnecessary imported products, which take longer time shipment and higher cost than the domestic products.

The last perspective is the development of a sustainable environment. In the case of the developed countries, the public transportation system is common because the transportation system is well-

provided. Also, governments have forced people to use public transportation rather than their car. The outcome on the environmental impact is the amount of the CO2 emission from the transport has been reduced that reflect to cut on the global warming issue and the amount of small particle (PM2.5) in the air.

Based on the multidisciplinary idea on the modern transportation and logistics system, not only provided to serve on the travel or commercial purposes, but it is also possibly linked with the medical perspective; for example, the integration between the medical centre and the transportation system that can develop to the moving medical hub. It can lead to serving medical service to people, who lived in the sub-rural area, to receive suitability and on-time treatment.

In conclusion, the connectivity on the transportation and logistics system is one of the primary keys to pursuing on Thailand's 20-year national strategic plan. The changing on the new logistic system can truly enhance the country's economy and the quality of life of people. The development can be spited into three parts, including social, economic and environment that can be occurred with the planning on people's needed and current situation of social and economic. The reason for this is the investment in the modern transportation system, and logistics require long-term construction and, it takes a long time to measure the success of the project. However, when the connectivity of modern transportation and logistics is complete, it will make Thailand has stability on economic from the aboard investors and the growth on industrials. Moreover, it will pull to ultimate development, which is the sustainable development by following Thailand's 20-year national strategic plan.

Keywords:

Modern logistics; Sustainability development; High-speed rail; Thailand's 20-year national strategic plan

Explain the impacts of your work especially to Thailand.

Based on the development of the industrial and logistics service in Thailand's 20-year national strategic plan reveals that Thailand can be a centre of logistics system in Asia and sufficiently linking with the world's logistics systems. The strategy is to combine the air transportation with the rail transportation and, it will lead to the growing on the tourism market in the country, activating the investment from the centre of business and providing the opportunity of the business owners easily reach the world's market. In the day and age, the import and export market in Thailand is inefficiency due to the logistics systems lack of management plan and locate only the centre of the big cities and the airport area. The connectivity of all modes of transportation can be made everyone reach the country's logistics system; in other words, rail transportation can enhance the reachability and quickly more than air transportation; for example, the shipping of the product from the royal project foundation from Chaing Rai province i.e, strawberries, grapes and fresh vegetables. And, the products have been shipped by the air only. In the fact that the shipment of products by air will take a longer time than the high-speed rail because, the product must be sent to the airport, which is typically located out of the central area, and waited a long time for the security check. Moreover, the frequency of the flight may less than the train — also, the transport of product by train possible to drop during the route. The author strongly believes that the development plan on the connectivity of the modern transportation and logistics system will provide the advantage of the country's economical in the long-term and well-disperse products aboard. The outcome of the whole project can genuinely enhance the quality of life of all-level people.

Explain how your work fit with the ATPER conference theme

The ATPER's meeting in 2019 is arranged in the theme "Applied Research and Innovation for Thailand 4.0", which aims at driving our country by following Thailand's 20-year national strategic plan. Also, the event goals at transferring on the technologies and continually developing on the research in Thailand. By following the aims of ATPER 2019, the authors give the perspective on the development of the rail structure that is strongly developed and invested from the Thailand government in terms of staff and technologies. Nevertheless, the exchanging of knowledge is limited within the group of researchers, who are doing the railway research. Regarding the author's interesting area, the perspective in terms of social, economic and environment along with the investment of the high-speed rail project in our country are included within the study that leads to the sustainability development. The author needs to disperse her knowledge with others talented participants in ATPER 2019, who may an expert in other fields, to continually efficiency develop the connectivity of the transportation and logistics in Thailand and reach the people's expectation on the user experience on the modern logistic service. The author also believes that the meeting with ATPER 2019 can pursue her and other participants research push new technologies, knowledge and ideas that suit with driven-on Thailand's economical in future.